

II B.Tech I Semester Supplementary Examinations, November 2006
BIOORGANIC CHEMISTRY
(Bio-Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes: [4x4=16]
 - (a) DHBP.
 - (b) Cortisone.
 - (c) Primaquine drug.
 - (d) Meperidine.
2. Explain in detail the various bonds involved in the cell. [4+12]
3. (a) Explain how the antibiotic coformycin inhibits the enzyme adenosine deaminase. [8]
(b) Describe the inhibition of the enzyme carboxy peptidase A by Benzyl succinate and explain inhibition of enzymatic reactions in general. [4+4]
4. Explain various specific catalytic groups that contribute to catalysis with example. [12+4]
5. Describe different proteins that are in association with metals. [16]
6. Write short notes
 - (a) Bolton's Model. [8]
 - (b) Dolphins Model. [8]
7. (a) What are crown ethers? [8]
(b) Explain in detail about Host-guest relationship. [8]
8. Explain the two 1,2-methyl migration in lanosterol. [16]

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1. (a) What do you mean by electrophilic and nucleophilic reactions? [4+4]
(b) Explain in detail that electrophilic or nucleophilic group accelerates the rate of reaction. [4+4]
2. (a) What is peptide bond ? [5]
(b) Explain asymmetry in amino acids. [6]
(c) Explain chemical synthesis of amino acids. [5]
3. Explain molecular recognition with different examples. [12+4]
4. How are enzymes classified? How do they catalyze the reactions with examples? [8+8]
5. (a) What are metalloenzymes and metal activated enzymes? [6]
(b) Metal-bridge complexes. [5]
(c) Role of metal ions in the mechanism of action of enzymes. [5]
6. Write short notes
(a) Bolton's Model. [8]
(b) Dolphins Model. [8]
7. What are cyclodextrin and explain Aromatic substitution can take place with the α -cyclodextrin. [16]
8. Explain in detail about the boat chair tricyclic structure of squalene. [16]

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1. (a) What is and analog? [8]
(b) Explain in detail with examples of molecular modifications. [4+4]
2. Explain any four organic reaction mechanism. [8+8]
3. (a) Define mutation. [5]
(b) What is chemical mutation. [5]
(c) Explain transition state analogue of chemical mutation. [6]
4. What is multifunctional catalysis? Describe it in detail with an example. [8+8]
5. Describe the hydrolysis of amides and peptides. [16]
6. (a) What do you mean by photosynthesis. [8]
(b) Explain photosystem I and photosystem II. [8]
7. Explain in detail that bis-imidazole-cyclodextrin cleaves cyclic phosphate. [16]
8. Explain Van Tamelen's synthesis. [16]

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1. How could you explain enzyme catalytic activity and functioning of DNA with molecular recognition? [8+8]
2. (a) Define a living cell. [5]
(b) How many types of living cells are there? Name them with suitable examples. [6]
(c) Explain the difference between them with a generalized diagram. [5]
3. (a) Define mutation. [5]
(b) What is chemical mutation. [5]
(c) Explain transition state analogue of chemical mutation. [6]
4. (a) What is photosynthesis ? How magnesium involves in the energy transfer? [4+4]
(b) What is Hill reaction? Explain in detail. [4+4]
5. (a) Explain in detail about hemoglobin. [8]
(b) Explain co-operative interaction in hemoglobin. [8]
6. Discuss in detail that how many oxidation states does copper exists. [16]
7. (a) What are crown ethers? [8]
(b) Explain in detail about Host-guest relationship. [8]
8. Discuss in detail about the biosynthesis of lanosterol. [16]
